Two Eagle Vegetation Management Project
Transportation System Report

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Contents

Introduction

This analysis describes existing condition of the transportation system within the proposed Two Eagle Vegetation Management Project (hereafter called Two Eagle Project) and the expected and potential effects of the alternatives on the transportation system and its management. Where appropriate, it focuses on the portion of the system potentially impacted by the Two Eagle Project. It also describes transportation-related activities proposed as part of this project, including construction of temporary roads, maintenance and reconstruction of existing roads, and use of rock and aggregate sources. Direct, indirect and cumulative effects of the alternatives are identified and discussed. Information sources used to complete this section include the following:

- Wallowa-Whitman Land and Resource Management Plan (LRM, 1990)
- Forest GIS Roads Layers and INFRA databases, queried in 2019, collectively referred to as the Wallowa-Whitman National Forest Transportation Atlas (transportation atlas, 2017)

Roads would be used to access commercial and non-commercial harvest units and to remove logs and other products. Roads would also be used to access units for prescribe fire activities, SAI activities, and monitoring.

Miles of road are represented as GIS miles, measured from the length of arcs in GIS. These lengths will vary some from actual miles on the ground depending on such factors as the accuracy of the map alignment, road grades, and overall length. Some roads exist on the ground (such as user created roads, abandoned roads and some roads on private land) which are not system roads and have not been recorded in the database. Although presumed small, the quantity is unknown and these roads are not accounted for in the data.

Maintenance levels are identified for each road in the system. In the atlas, roads are assigned both an operational maintenance level (reflecting existing conditions) and an objective maintenance level (identifying a needed change in maintenance level that has been analyzed and approved, some of which may still need to be implemented). Throughout this report, maintenance levels reported are operational unless noted otherwise. Maintenance levels assigned to roads in the project area are maintenance level (ML) 1, ML 2 and ML 3:

- ML 1: closed roads that have been placed in storage between intermittent uses;
- ML 2: roads open for use by high clearance vehicles;
- ML 3: roads open and maintained for travel by a prudent driver in a standard passenger car

Maps displaying location of proposed transportation system elements for each action alternative are provided in Appendices A and B of the EA. Details such as route numbers and miles proposed for treatment are presented in the attachment at the end of this report.

Existing Condition

The primary routes accessing the area were likely established as Native American trails followed by wagon roads~~,~~ during the decades following the first European settlement of Eagle Valley and prior to establishment of the national forest. Beyond these valley-bottom routes, much of the existing transportation system was constructed primarily for mineral exploration and timber harvest. Roads were located to facilitate ground-based skidding and, later, skyline logging systems.

Open and Closed National Forest System Roads

The NFS (National Forest System) arterial and collector roads serving the project area are 67, 77 and the 7055. Within the project, most of the roads are identified in the atlas as maintenance level 2 (maintained for high clearance vehicles). The 6700 and 7700 roads within the project area are maintenance level 3

(maintained for passenger cars) and have crushed aggregate surfacing or improved surfaces. The following recreation and administrative sites lie within or in close proximity to the project area:

- West Eagle Trailhead and Campground off NFSR 7700
- Two Color Campground off NFSR 7755
- Two Color Guard Station Rental off NFSR 7755
- Boulder Park Trailhead and Campground off NFSR 7755
- Tamarack Campground just east of the project area on the NFSR 7700.

Roads associated with these sites (including access roads, parking areas, and spur roads within the sites) are considered part of the road system.

The remaining open road system is generally pit run or native material based roads. Maintenance work has been deferred on ML1 stored roads to where trees and brush in the ditches and shoulders remain in the scope of timber sale maintenance specifications. Surface and drainage conditions are varied. Some road sections exhibit surface rilling, indicating need for repair of surface cross drainage and, in some cases, need for additional drainage.

Approximately 28.58 miles of stored NFS roads (maintenance level 1 or ML1) are within the Two Eagle project area. Most are suitable for use with some maintenance work, these roads are recommended for use in this project (see discussion below). The proposal shows 11.06 miles of NFSR would be decommissioned.

Table 1. Miles of road by subwatershed, jurisdiction, and operational maintenance level

Jurisdiction	Subwatershed			Total Miles
	Bennett Creek Eagle Creek	Headwaters Eagle Creek	West Eagle Creek	
Forest Service				
ML3	4.51	4.61	0.42	9.54
ML2	9.94	3.97	18.07	31.98
ML1	8.64	3.39	16.55	28.58
Total FS	23.28	11.97	35.16	70.10
Total Open (NFSR)	14.45	8.58	18.49	41.52
Total Closed NFSR)	8.64	3.39	16.55	28.58

Note: County, private and unknown roads are assumed open.

Five bridges are located along proposed haul routes. Existing conditions of each are described in Table 2.

Table 2. Bridges along proposed haul routes and existing condition

Bridge	Existing Condition Description
6700000 Big Creek #1 M.P 0.1	Fair condition. EOB Col 1, 2, and 3 need sister columns. Running plate on U/S EOB has been damaged and needs replacement. Deck was cleaned off so visible for inspection. It is worn 3/4" to 1". Curb not crash tested type.
6700000 Big Creek #2 M.P. 1.542	Good condition. Concrete grout wearing surface partially worn off. Needs more brushing. Railing rating of 1 assumes it is crash worthy.
6700000 Big Creek #3 M.P. 4.046	Good condition. Grout wearing surface partially worn off. Railing rating of 1 assumes it is crash worthy.
6700000 West Eagle Crossing	Good condition. Pre-1970 glulam and new load rating was done 7/7/2017. U/S curb has interior decay with 2" shell.

M.P. 13.988	
7700000 West Eagle Crossing M.P. 35	Culvert reported as Bridge (CRAB). In good condition.

Designated snow mobile routes

There is an over-snow route designated on some roads in the project area. These snowmobile trails restrict non-over-snow vehicles during the time route is groomed. Closure is posted on the ground to provide public safety, reduce user conflict, and identify motorized snow play opportunities. Snowmobile routes that intersect the project area include NFS roads 7700, 7755 and 6700. Snowmobile routes are typically groomed from December – April, or until the snow diminishes at the trailheads located at Catherine Creek Summit (OR State Hwy 203) and on the 6700 road at the Forest Boundary.

Private Land and Rights of Way

There are inholdings of private land within the project area. The forest has right-of-way across one parcel on two roads: 6700800 and 6700830, both of these roads will be used for harvest activities. On road 6700068, no right-of-way has been acquired. This road is not needed for commercial harvest activities, however, post-sale non-commercial treatments may need to consider the need for alternative access (i.e., walking to units, etc.).

Road densities

Road density standards and guidelines are referenced in Chapter 4 of the Forest's Land and Resource Management Plan (forest plan) and are often indicators for affects to wildlife, soils, and water quality. Open road density guidelines are specifically addressed with respect to management areas at a subwatershed scale. Only 5 management areas have specific target open road densities specified: MA 1, 1W, 3, 3A, and 18. Only one of these five MA's exist in the project area, and that is MA1 (timber emphasis), with a target open road density of 2.5 miles/square mile. Table 3 shows the existing open road densities within the 3 subwatersheds in the area. Because there is a transportation guideline discussed in the forest plan for MA 15 (old growth – avoid new construction of roads), the MA 15 areas were lumped into the adjacent MA 1 areas for calculations. Where snow would normally provide an adequate level of road closure on winter ranges (MA 3), additional closures to meet the 1.5 mile per square mile standard would not be necessary (Forest Plan 4-62 #10 and Record of Decision page 12). With no MA 3 (winter range) located in the area, it could also be noted that the closure due to snow would also limit road use during that season in the areas designated as MA 1.

Table 3. Existing Open Road Densities within Two Eagle Project Area

Subwatershed	Management Area	Total Acres	Square Miles	Open Road Miles	Open Road Density
Bennett Creek Eagle Creek	1/ 15/15-7	1950	3.05	13.71	4.50
Headwaters of Eagle Creek	1/ 15/15-7	337	0.53	0.29	0.55
West Eagle Creek	1/ 15/15-7	3811	5.95	17.72	2.98

Miles shown are calculated from GIS. In sliver areas where the square miles are less than 0.1 mi/mi^2, these areas have been removed from calculations. Subwatersheds where there are no road miles or relevant management areas (MAs with no FP open road density requirements) are not shown for clarity.

Effects Analysis

Effects related to roads are generally addressed as impacts to other resources such as aquatics, soils, invasive weeds, and wildlife. To help support the analyses of these other resources, the effects described here will focus on providing information on road development needs and road density estimates.

The analysis for determining the direct, indirect and cumulative effects of the project on the transportation system is generally bounded by the project area, except in consideration of haul routes. Effects to haul routes, and activities along those routes (danger tree removal), will extend to the point where the road leaves NFS lands and/or is no longer under NFS jurisdiction.

No Direct, Indirect, or Cumulative Effects

The following activities in the action alternatives would have a negligible potential to effect the transportation system:

- Snag Retention
- Snag Creation
- Right-of-way acquisition
- Pre-commercial thinning
- Prescribed fire activities (pile burning and underburning) -Road use would be limited to access to and from units. While some burn units have been designed to take advantage of roads as existing fuel breaks, no disturbance of the road surface is planned.
- Mechanical firelines
- Connective corridors

These activities and their effects will not be discussed further in this section.

Direct and Indirect Effects on Transportation System

The Two Eagle project area is the analysis area for direct and indirect effects to the transportation system.

Alternative 1-No Action

This alternative would have no effect on the projects area's existing transportation system because no NFS roads would be used, maintained, constructed, decommissioned, opened, or closed under this alternative. Conditions discussed for the affected environment (see existing conditions discussed above) would continue under this alternative. Routine maintenance and repairs would continue on a cyclic basis, depending on funding level and forest-wide priorities. Opportunities to replace or upgrade road/stream crossing and improve road surface drainage would occur only as funding allows and on an incremental road by road basis.

Table 4. Transportation Activities Summary by Alternative

Transportation Activities	Alternative 1 Miles	Alternative 2, 2M Miles	Alternative 3 Miles
Total Open Roads in Project Area	41.52	41.52	41.52
Open Roads to be Closed after harvest activities	0.00	3.82	3.82
Open Roads to be Decommissioned after harvest activities	0.00	1.01	1.01
Total Closed Roads in Project Area	28.58	28.58	28.58
Closed Roads to be Opened for harvest activities	00.00	15.33	8.42
Closed Roads to be Reclosed after harvest activities	0.00	10.12	6.94
Closed Roads to remain open after harvest	0.00	0.10	0.10

activities			
Closed Roads to be Decommissioned after harvest activities	0.00	5.11	1.38
Danger Tree removal (along system haul roads)*	0.00	57.32	46.48
Total Temporary Road Construction miles	0.00	5.25	3.57
New Construction of Temporary Roads	0.00	3.5	2.45
Existing non-system into Temporary Roads	0.00	1.75	1.12
Decommission of Existing NF System Roads miles (by harvest and other funding opportunities)	90.00	11.06	11.06
Reconstruction of NF System Roads miles	0.00	1.7	0.7
Additional Gates added	30	3	3
Culvert replacement/reconstruction)	2	4	2
Temporary Culvert Installation	0.00	3	1

Haul routes, Alternative 2 and 3

The appraisal point for timber sales generated by the Two Eagle project would be La Grande, Elgin or John Day. The appraised haul route for approximately 60 percent of the project area would funnel to NFSR 67 (Big Creek), then west on Hwy 203 to Union and onto La Grande. The northwest portion which is approximately 40 percent of the project will haul on NFSR 77 (Flagstaff Butte) to State Hwy. 203 and west to Union and then La Grande.

The current *Wallowa-Whitman N.F. Commercial Road Use Rules and Road Use Permit Requirements* apply to all commercial use of NFS roads. There are no specific road rules applicable to roads in the Two Eagle project area. Typically, timber sale contracts on the Wallowa-Whitman National Forest and La Grande Ranger District have restricted haul in the following manner:

- Haul during the normal operating season
- No haul on weekends and Federal holidays
- Dry, frozen, or stable ground conditions on native surface roads
- All use must cease when road damage (as defined in the Commercial Road Rules) begins to occur.

There are inholdings of private land within the project area that are crossed by through-roads that do not have permanent easements to the Forest Service. Those roads include segments of 6700800, 6700830, and 6700068 which will be used for timber haul from proposed commercial units. The Forest will proceed with permanent easement acquisition. In the event a permanent easement cannot be acquired before a project will be implemented, the Forest will seek a temporary road use permit. Roads associated with recreation and administrative sites within the project area (including access roads, parking areas, and spur roads within the sites) would not be used for log haul and would not be impacted by this project.

Road maintenance

The purchaser of a timber sale contract or contractor of a stewardship contract would be required to perform road maintenance commensurate with their use on all NFS roads. Maintenance would be performed as needed on all haul routes. Maintenance would be performed in accordance with timber sale contract specifications. In addition, deposits are collected on crushed aggregate roads for Road Surface Replacement (RSR).

Typical maintenance activities include: blading roadbeds, dust abatement (usually with water), surface rock replacement (spot rocking), ditch and culvert cleaning, removal or ramping over of small slumps and slides, road-side brushing of overhanging limbs and small diameter trees (<4 inch), logging out blown

down trees, and felling danger trees. Felled danger trees would be left in place or removed if merchantable and marked for removal.

During harvest activities, closed roads would be opened for project use and typically re-closed prior to acceptance of the harvest units. During use, they would be maintained as needed to prevent resource damage. The most common needs on closed roads proposed for use in the project are clearing, logging out, and addition of surface cross drainage. Following use, water bars would be installed to provide drainage prior to closing.

In all alternatives 3.18 miles will be gated to limit traffic to only private land owners, ditch maintenance, and emergency fire access after harvest activities are complete. All other current open roads would remain open after harvest activities. Post-haul maintenance activities would include blading followed by water barring or cross-ditching on most maintenance level 1 and 2 roads. Post-haul blading would be performed on ML 3 roads and construction of earthen barricades would take place on ML 1 roads not scheduled to be left open.

Some roads would require reconstruction (see below). Road maintenance work is still required for reconstructed roads as use continues and maintenance levels are maintained. This is primarily for during- and post-haul needs.

Road Reconstruction

The term reconstruction refers to road work outside the scope of timber sale maintenance specifications these roads would be listed in the timber sale contract for specified road reconstruction and be applicable to BT 5.2. No reconstruction work is planned that would raise the road standard to a higher level within this project area. This work is needed to support safe removal of timber during the sale. Timber harvest, along with recreational users, administrative and private land users will share the roads. Road maintenance and the addition of minor reconstruction is imperative to keep the road system stabilized and reduce sediment delivery to the watershed.

Road reconstruction is proposed in both action alternatives associated with the Two Eagle project. Approximately 0.7 to 1.7 miles of NFS road, comprised of maintenance level 1, 2 and 3, would be reconstructed as summarized in Table 4. As these road miles are very similar among alternatives, all three alternatives will be discussed together. See Appendix A of this report for route-by-route descriptions of reconstruction needs.

Generally, road reconstruction would take place within the original footprint of the road template (i.e., between top of cut and toe of fill) and would be considered as heavy maintenance for the effects on other resource areas. For this project, reconstruction in all alternatives would be minimal with reconstruction of some segments to improve drainage and prevent runoff into streams, minor spot rocking and addition of culverts to protect water quality being planned.

Temporary roads

By definition, temporary roads are authorized by contract, permit, lease, or other written authorization that are not a forest road and are not included in a forest transportation atlas (FSM 7705). In the context of timber management, temporary roads include those roads needed only for the purchaser's use for a given timber sale(s), such as roads used to haul timber from landings to permanent National Forest System roads. The Forest Service and the purchaser must agree upon the location, resource protection requirements for road construction, clearing widths, and closure or rehabilitation requirements (FSH 2409.18, Ch. 43.2). Temporary roads are not constructed to serve long-term future uses and must be closed, decommissioned, prior to closure of the timber harvest. Temporary roads may only be used for short-term, non-recurrent use by the purchaser. Purchasers would not be allowed to construct temporary roads in lieu of building specified roads needed for future recurrent management of the area (FSM

2432.34b). Temporary roads are addressed in the Timber Sale Contract in section BT6.63. Plans and criteria can be further specified in provision CT5.1#, Temporary Road and Landing Construction.

BT6.63 text:

> As necessary to attain stabilization of roadbed and fill slopes of Temporary Roads, Purchaser shall employ such measures as outsloping, drainage dips, and water-spreading ditches.
>
> After a Temporary road has served Purchaser's purpose, Purchaser shall give notice to Forest Service and shall remove bridges and culverts, eliminate ditches, outslope roadbed, remove ruts and berms, effectively block the road to normal vehicular traffic where feasible under existing terrain conditions, and build cross ditches and water bars, as staked or otherwise marked on the ground by Forest service. When bridges and culverts are removed, associated fills shall also be removed to the extent necessary to permit normal maximum flow of water.

Temporary road construction is planned to access harvest units where NFS roads do not exist. These roads are needed to provide access for logging and hauling equipment in the harvest unit. Skyline units must have yarders in key locations in order to log the unit. Roads to landings within tractor units reduce the skidding distances, may reduce the amount of soil disturbance created by skid trails, and enhance the economics of logging the unit. Particularly for skyline units, the unit cannot be harvested without an access road to the landings. Once logged, these units would not be logged again for at least 20 years. Because the sole purpose and need for the road is timber harvest to a local unit, they are planned as temporary rather than system roads. See Haul Route Table for estimated miles planned. Temporary road access may be located on existing templates or undisturbed ground. For the purpose of analyzing the effects on soil conditions and hydrology, miles of temporary road are differentiated between known existing templates and new disturbance. All temporary roads would be closed and rehabilitated under the terms of the timber sale contract (BT5.1, CT5.1#, BT6.63) prior to acceptance of the associated units.

NFS road decommissioning

Roads were identified in the Eagle Creek Watershed Analysis (USDA-FS, 1997) as a source of sediment to streams, especially roads located within riparian areas. Roads were also identified under the 2015 Wallowa-Whitman Travel Analysis Report (WWNF TAR) (Subpart A of the Travel Management Rule) as possibly not needed for future management of forest resources which could be considered for decommissioning or designation as a trail. Reducing the number of unneeded roads is expected to aid in resource protection and establishment of a minimum sustainable road system. The objective of road decommissioning is to stabilize, restore, and revegetate unneeded roads to a more natural state to protect and enhance NFS lands (FSM 7734.02). Decommissioned roads are removed from the forest transportation atlas. Road decommissioning treatments may range from simply administratively removing the road from the system to fully restoring the slope to near natural contours. The level of treatment is determined site-specifically based on the road's current condition and location, and what is needed to meet the objective to hydrologically stabilize the road.

Using the WWNF TAR as a base, and then refining those recommendations using on-the-ground road reconnaissance, a group of roads adjacent to harvest units and within the project area was identified as candidates for decommissioning: 24 road segments totaling approximately 11.06 miles. Each of these has an operational maintenance level 1 and objective maintenance level 1 or DE-Decommission. Most are located in draw bottoms or are in close proximity to stream channels, where stabilization treatments would benefit water quality. Others are in poor location for the aquatic resources and have naturally revegetated and restored to a level where it would be more prudent to construct a new road than to reconstruct the old road. These roads are shown on transportation system maps in the Road Management Maps in Appendix F of the EA. The need for each road was confirmed during project design of the Two Eagle project. If the road was needed for harvest activities in the Two Eagle action alternatives, the

objective maintenance level was kept as ML1 (storage) and it was not considered for decommissioning. These roads planned to be used for haul would be treated under a timber sale in the same manner as closed roads with the exception for the 6700839 road which will be decommissioned upon the harvest and completion of Unit 22.

Rte_No	Road Length (GIS mi)	Proposed Length to Decommission	BEGIN TERMINI	END TERMINI	OBJ ML	OPER ML	TREAT. STRATEGY	REMARKS
7700556	0.90	0.90	7700	End of Road	1	1	A	Grown in, no decom needed. Pull signs. Current route_stat=DE
7700537	0.21	0.21	7700535	End of Road	1	1	A	Wet area. Pull signs and leave
7700492	0.67	0.67	7700490	End of Road	1	1	A	Pull signs and leave, grown in
7700493	0.24	0.24	7700492	End of Road	1	1	A	Pull signs and leave, grown in
7700490	1.12	1.11	7700	End of Road	1	1	A	Rip and block after Trailhead
7700472	0.45	0.45	7700470	End of Road	1	1	A	Decom after logging unit (whole road)
7700473	0.32	0.32	7700470	End of Road	1	1	A	Pull signs and needs Rip
7700474	0.14	0.14	7700470	End of Road	1	1	A	Pull signs and leave, grown in.
7700462	1.13	0.51	7700460	End of Road	1	1	A	Decom last 0.51 mi after logging unit
7700460	1.20	0.25	7700460	End of Road	1	1	A	Pull signs and Rip last 0.25
7700456	0.12	0.12	7700450	End of Road	1	1	A	Pull signs and leave, grown in
7700455	0.11	0.11	7700450	End of Road	1	1	A	Decom after logging unit
7700453	0.18	0.18	7700450	End of Road	1	1	A	Pull Signs, leave, grown in
7700452	0.12	0.12	7700450	End of Road	1	1	A	Pull Signs, leave, grown in
7700451	0.40	0.40	7700450	End of Road	1	1	A	Pull Signs, leave, grown in
7755050	0.30	0.19	7755	End of Road	1	1	A	Decom last 0.19 of Road.
7755075	0.38	0.25	7755	7755	1	1	A	Leave dispersed site and rip 0.25
6700050	0.87	0.87	6700	End of Road	1	1	A	Pull signs, and leave, grown in
6700064	0.63	0.29	6700	End of Road	2	2	A	Gate, give ditch access. Decom 0.29, Berm and Rip
6700125	0.31	0.13	6700	6700126	2	2	A	Berm at 6700125. Wet area. Leave. Decom 0.13
6700133	0.09	0.09	6700130	Pvt. Land	1	1	A	Berm, decom as per direction
6700141	0.16	0.16	6700140	End of Road	2	2	A	Berm, Rip change MRS status

6700140	0.68	0.39	6700	Rock Pit	2	2	A	Leave access to rock pit, decom beyond rock pit (0.39 miles)
6700839	2.96	2.96	6700830	6700830	1	1	A	Bermed, fence in roadway. Rip and Decom after sale.
Total	13.69	11.06						

Additional treatments needed on roads identified for decommissioning would be performed utilizing a separate contract or possibly a stewardship contract to accomplish decommissioning objectives.

Material sources

Two existing material sources have been identified for future use in the project area. Rock material produced from these sources would be utilized for pit-run, borrow, road surfacing, and subgrade reinforcement in areas where springs or wet areas have developed in the roadbed. Each of these sites has been previously developed for crusher and stockpile sites and approximately 5,000-15,000 cubic yards of material could be crushed and stockpiled from these sources. The pit development areas may be increased by 1-2 acres. In addition, there are numerous smaller sites that may be used for aggregate or roadside borrow sources. No aggregate sources/quarries within the Wild and Scenic River corridor would be developed for this project. The project record file contains detailed lists of all potential material rock sources. The main sources are listed below:

Table 5. Existing material sources

Pit Name	Legal Location	Road Access	Type of Material
Basin Mine	T6S, R43E, Sec. 32 NW/NW	6700141 MP 0.15	Crushed, pit-run, grid-roll, rip-rap Not much volume
Huckleberry Rock Pit Also known as: Taylor Green Rock Pit	T6S, R42E, Sec. 02 NW/NW	7740 MP 0.25	Crushed, pit-run, grid-roll

All gravel and fill stockpiles, quarry sites, and borrow material will be inspected for invasive plants before use and transport. Only gravel, fill, sand and rock that is judged to be weed free by the district or forest weed specialists would be used.

Open road density

Table 6. Post-Sale Open Road Densities (ORD) by Alternative

SWS	Management Area	Total Acres	Post Sale Open Road Miles	Alternative 1 ORD (mi/mi^2)	Alternatives 2/2M ORD (mi/mi^2)	Alternative 3 ORD (mi/mi^2)
Bennett Creek/ Eagle Creek	1/15/15-7	1950	10.30	4.50	3.47	3.47
Headwaters of Eagle Creek	1/15/15-7	337	0.00	0.55	0.55	0.55
West Eagle Creek	1/15/15-7	3811	12.91	2.98	2.16	2.16

Post Sale Road Densities do not change between alternatives 2, 2M and 3. The greatest impact results from proposed gates on three roads, and closing a portion of NFS road 7755075. Although the open road density is reduced for Management area 1, the Bennett Creek/Eagle Creek subwatershed would remain above the forest plan open road density standard of 2.5 miles per square mile under all alternatives. It is difficult to reduce road densities within these areas due to the presence of the major road system (NFSR 77, 67 and 7755) which are the primary access roads in the area and cannot be closed.

Travel restricted areas

Motorized use (for timber operations and administration) in closure areas during closure periods would be permitted through the timber sale contract. Special requirements may be utilized in contract provisions to limit use and haul during certain critical times identified in this analysis.

Designated snow-mobile routes

Winter-use of these routes would need to be assessed and written approval provided prior to permitting this use. Designation of alternative routes for snow mobiles would be considered and coordinated with the Snowmobile clubs.

Cumulative Effects on Transportation System

Potential cumulative effects are analyzed by considering the proposed activities in combination with the present and reasonably foreseeable future actions within the defined analysis area. The cumulative effects analysis area for this project is the area contained within the project boundary, with the addition of haul routes under NFS jurisdiction that extend beyond. A summary table of the present and reasonably foreseeable future management activities that are either currently occurring or would occur within the next five years are located in Appendix D of the EA. Those activities that overlap in time and space with the Two Eagle activities within the analysis area that have the potential to create a measurable cumulative effect on the transportation system will be analyzed below.

Table 7. Cumulative Effects Determination for the Transportation System

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Noxious Weed Management W-W Invasive Species Treatment ROD		Yes	Yes	No	Will not affect road surfaces.
Veg Management		No	No	No	
Fuels Reduction & Rx Burning		No	No	No	
Special Uses: • Phillips Ditch		Yes	Yes	No	May have some traffic on road system for ditch maintenance but will not be measurable.
Recreation – Eagle Creek Wild & Scenic River		Yes	Yes	No	
Recreation-Dispersed Camping		Yes	Yes	No	
Recreation-Snowmobile Trails		Yes	Yes	No	
Recreation -Firewood Cutting		Yes	Yes	No	Some traffic on road system anticipated for firewood gathering but not expected to be measurable to road system.

Project	Potential Effects	Overlap in:		Measurable Cumulative Effect?	Effects
		Time	Space		
Recreation – OHV Use		Yes	Yes	No	
Recreation – Two Color Guard Station		Yes	Yes	No	
Roads & Trails – Travel Management Plan	Increased number of users on fewer roads	Yes	Yes	Yes	Potential for conflicts, more wear on designated routes, increase in maintenance needed (and associated funding), roads grow in, change in how roads used for administrative use.
Road Maintenance – 7700 & 6700 Roads	Improved road conditions and other resource protection	Yes	Yes	Yes	Increased public safety by reducing road hazards, reducing sedimentation by maintaining positive function through drainage devices.
Roads – Danger Tree Removal		Yes	Yes	No	Minor scattered occurrence, not expected to have measurable effect to transportation system; however, will improve public safety and reduce the need for removing down trees out of roads.
Grazing Allotments		Yes	Yes	No	
Wildlife Enhancement Main Eagle River Corridor.		Yes	Yes	No	
Mining		No	No	No	No approved plans of operation
Private Land Activities •Private Structures •2 Year round Residences		Yes	Yes	No	

Alternative 1 - No Action

No direct or indirect effects to the transportation system are expected. Therefore, on-going and reasonably foreseeable road maintenance and repairs would not have additive impacts and would not result in any cumulative effects.

Alternatives 2 and 3

Travel Management Plan

Future changes to use of the transportation system in the Two Eagle project area may occur as a result of implementation of the 2005 Travel Management Rule. Under the Travel Management Rule, the forest is required to designate roads, trails and areas for public motor vehicle use. Since the forest is currently an open forest for vehicular use, these designations may be more restrictive than what would allowed under the road management plan for Alternative 2/2M and 3. This may result in concentrating the recreational, commercial, and administrative users on a smaller number of roads. This concentration of use may generate conflicts between users, especially with OHVs and full-size traffic.

Additionally, the Two Eagle project area shares a border with the Bald Angel Travel Management Area. The Bald Angel Travel Management Area allows use of motorized vehicles on a designated system of roads and trails while prohibiting cross country travel to enhance big game security and distribution and improve hunting opportunities.

The incremental effect of the project on road access would include a minor reduction in motorized access due to closing or decommissioning 4.83 miles of ML 2 road. This equates to a change in road access on approximately 12% (4.83 mi/41.52 mi) of the open road system in the project area., and 0.13% of roads across the three subwatersheds. One road, 7700447 (less than 0.1 miles in length), is listed as closed, but proposed to remain open, as it is currently being used for dispersed recreation.

Minimum Road System.

Under 36 CFR 212.5, Subpart A, the Forest Service was directed to identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands. This analysis was completed in September 2015 (WWNF TAR) and identified roads likely needed for resource management on the forest as well as those roads no longer needed to meet forest resource management objectives. It should be noted that the TAR is only a recommendation, and site – specific evaluation and verification of these recommendations occurred during the Two Eagle planning process. Minor changes to the recommendations in the TAR would be made as a part of the decision for this project.

Summary of All Effects

Alternative 1 - No Action

There would be no direct, indirect, or cumulative effects to the transportation system. There would be no change in open road density within the Two Eagle project area.

Summary of the Action Alternatives

None of the action alternatives add to the permanent road system and all action alternatives would result in a minor reduction in open road access due to closing or decommissioning 4.83 miles and gating of 3.18 miles of currently open road. The existing NFS road system would be used for project activities, with the greatest potential effects resulting from log hauling. Proposed maintenance and reconstruction would help reduce road use effects.

In addition to reconstruction proposed to facilitate timber harvest, there are proposed changes to the road system that would occur under both action alternatives; gate installations in three locations for Phillips Ditch maintenance, Fire and Administrative access and wildlife security, removal/replacement of culverts for fish passage and water quality enhancement, and reconstruction of some road segments to facilitate timber haul, improve drainage and prevent runoff into streams.

No alternatives propose any new permanent road construction. While both alternatives would move the area toward Forest Plan standards, open road densities may change under any alternative with future implementation of the Travel Management Rule.

Mitigations and Monitoring

Project Design Features and Mitigation Measures

1. System roads planned for project use will be maintained to a standard needed for project use. Maintenance activities will be in accordance with the Wallowa-Whitman standard specifications for timber sales. Typical maintenance activities include; blading and shaping roadbeds, cleaning ditches and culverts, installing and replacing temporary culverts, removal or ramping over of small slumps and slides, road-side brushing of overhanging limbs and small diameter trees,

logging out blow downs and felling danger trees. Haul activities may include; dust abatement on primary haul routes, and snow removal for winter haul. Post-haul maintenance includes; water barring and blocking closed roads; re-establishing and adding to cross ditches on lower standard open and closed roads, and final blading and shaping of all roads, as necessary.

2. System roads needing work beyond the intent of the road maintenance specifications will be reconstructed to the minimum standard needed to support haul, or would be reconstructed using supplemental funding, if available. Typical reconstruction work includes heavy clearing, drainage work (springs, culvert replacements), removal and stabilization of landslides, placing rock subgrade reinforcement and surfacing. System roads that are closed will be opened for project use only and closed upon sale completion. Very little reconstruction is identified in this project.
3. Temporary roads will be constructed and then stabilized and blocked under the terms of the contract. Location and clearing width, and any special construction requirements (including post-haul treatment) will be agreed to in writing prior to construction.
4. Existing roads that are not system roads will be used for the project under the timber sale contract terms for temporary roads. Location, clearing width, and any special requirements (including post-haul treatment) will be agreed to in writing approval prior to construction and they will be closed and stabilized after use.
5. Open and closed (ML1 and 2) system roads not necessary for public access may be closed to the public and signed for project use only during project operations.
6. Bridges and culverts will be installed during instream work window. Culverts to be installed on Category 4 streams will occur during dry channel conditions.

Monitoring Recommendations

Implementation monitoring for transportation-related activities would be specified in the timber sale contract.

Consistency and Compliance

Wallowa-Whitman National Forest Land and Resource Management Plan as amended

There are not specific open road density standards or guidelines for Management areas 7 (Wild and Scenic Rivers) and 15 (Old Growth). Forest plan direction for MA 7 is that the transportation system must be consistent with wild, scenic, and recreational river objectives (4-71-75), which is discussed below. Forest plan direction for MA 15 relative to transportation is to avoid new NFS road construction to manage new and existing roads to retain the old-growth characteristics of the area including solitude (4-90). The proposed Two Eagle project would be consistent with this guidance because there would be no new permanent roads constructed.

Wild and Scenic Rivers: Alternatives 2 and 3 would be consistent with forest plan guidance for wild and scenic rivers (MA 7), and specifically for Eagle Creek Wild and Scenic River as outlined in the river plan (Forest Plan Amendment 2).

Road work (including maintenance) would be conducted in a manner consistent with the Wild and Scenic River designation. The proposed work would protect and enhance the outstandingly remarkable values associated with Eagle Creek. Specifically, road reconstruction would be aligned with the following desired future condition for the Eagle Creek Wild and Scenic River: “Water quality will improve over time with the emphasis on [outstandingly remarkable] values and water quality, and the requirement to protect river values in all adjacent area activities. Watershed enhancement projects will continue to be identified and accomplished over time.” In addition, the following standards/guide for watersheds (#56) is

applicable: “Improve road maintenance levels on roads to reduce sedimentation.” Road reconstruction and maintenance projects identified in these alternatives address this guidance by:

- Reducing sedimentation by constructing and maintaining drainage devices, such as ditches, surface cross drains, and culverts, which not only reduce the volume and velocity of water flow, but also the duration upon which the flow lies on the road itself. This allows the deposition of any sediment in the flow to be released at more frequent intervals across the landscape, reducing or eliminating any direct deposits into the streams themselves.
- Reducing or eliminating rutting and channeling of water through road blading, thus reducing the volume and velocity of water being transported over the road, allowing it to be distributed slowly through sheet flow to the adjacent roadside vegetation.
- Buttressing a roadbed by addition of crushed aggregate surfacing, thus allowing traffic to use a road without creating ruts, rills, or other road damage. Construction of blind drains where spring or other bogs have developed in the traveled way have a similar result.

Recreation standards and guides for the Recreational River classification (c. 2) states, “Road access will be provided to most areas along the Recreational sections. Existing level of access will be maintained.” This standard and guide would be met by maintaining segments of NFSR 7755 which is the main road along Main Eagle Creek in the Wild and Scenic portion. This would enhance the recreational experience by providing a safer and more durable route to travel, by blading and providing drainage and surfacing as necessary to reduce the susceptibility to rutting, channeling, or concentration of water (mud holes) on this road.

Attachment #1 – Transportation System Road Segments

Road System Maintenance and Reconstruction Segments - Condition and Inventory

Route Number	Begin Termini	End Termini	Segment Miles	OB ML	OP ML	Surface Type	TSL	Juris-diction	Remarks
7700000	Hwy 203	6700000	20.59	3/2	3/2	AGG	D	FS	300 C/Y Spot Rock ¾"
7700556	7700550	7700535	0.90	1	1	NAT	D	FS	Grown In- DE
7700554	77000550	.15 mp	EOR .0.92	2/1	2/1	NAT	D	FS	Close at 0.15. Non Comm units 92, 94 access
7700550	7700000	EOR	3.34	2/1	2/1	NAT	D	FS	surface drainage, close after harvest unit 31,34 at mp 0.25
7700533	7700535	EOR	0.24	1	1	NAT	D	FS	Close and Berm, not needed with sale
7700535	7700000	7700000	4.13	1	1	NAT	D	FS	Gate before Ford, Close past Ditch access needs with Berm
7700537	7700535	EOR	0.21	1	1	NAT	D	FS	Springs, Grown in. DE
7700539	7700000	EOR	0.04	1	1	NAT	D	FS	Grown In, DE.
7700520	7700000	Before Trout Creek	0.67	1	1	NAT	D	FS	Add temp Culvert at Spring, unit 60. Berm and close after sale. Radius turn onto 7700 should clear.
7700515	7700000	7700510	.11	1	1	NAT	D	FS	Clearing, Close at 7700510 jct. Berm and close after harvest unit 68
7700510	7700515	EOR	0.26	1	1	NAT	D	FS	Clearing, use 515 as turnaround haul. Close after harvest unit 68
7700493	7700492	EOR	0.27	1	1	NAT	D	FS	DE.
7700492	7700490	7700493	0.07	1	1	NAT	D	FS	DE after interface with West Eagle Campground
7700490	7700000	EOR	0.56	1	1	NAT	D	FS	DE at Trail Head
7700489	7700000	loop	0.17	2	2	NAT	D	FS	Horse camp T.H. loop no action
7700474	7700470	EOR	0.13	1	1	NAT	D	FS	DE
7700473	7700470	EOR	0.32	1	1	NAT	D	FS	DE possibly temp culvert
7700472	7700470	EOR	0.45	1	1	NAT	D	FS	DE after harvest unit 55 Possibly temp culvert
7700470	7700000	EOR	1.96	1	1	NAT	D	FS	Clear, Drainage, Close after Harvest with berms at 0.50 m.p. where road steepens
7700464	7700460	EOR	0.30	1	1	NAT	D	FS	Keep stored on the 460 system for fire access
7700462	7700460	0.71	1.13	1	1	NAT	D	FS	DE last .50 of road, No culvert over Jim Creek. Temp culvert to be installed for extraction of timber from unit 88.
7700460	7700000	EOR	2.31	1	1	NAT	D	FS	Perched culvert over Jim Creek, Unit 52 will need to be harvested in dry conditions. Pull culvert on upper Jim Creek. Add gate at Bottom of road
7700459	7700450	EOR	0.13	DE	DE	NAT	D	FS	Use as Temp Road and obliterate after haul. Unit 43

Route Number	Begin Termini	End Termini	Segment Miles	OB ML	OP ML	Surface Type	TSL	Juris-diction	Remarks
7700458	7700450	EOR	0.12	DE	DE	NAT	D	FS	Use as Temp Road and Obliterate after haul. Unit 43
7700457	7700450	Jct. 7700454	2.12	1	1	NAT	D	FS	Clearing, drainage, Open for harvest of units 116, 30, 21, 118, 119. Adjust TR9 at jct. to haul out top. Berm after harvest
7700456	7700450	EOR	0.12	1	1	NAT	D	FS	DE
7700455	7700450	EOR	0.11	1	1	NAT	D	FS	DE
7700454	7700457	EOR	0.56	1	1	NAT	D	FS	Clear, Drainage, Haul and Berm after Harvest
7700453	7700451	EOR	0.18	1	1	NAT	D	FS	DE
7700452	7700451	EOR	0.12	1	1	NAT	D	FS	DE
7700451	7700457	EOR	0.41	1	1	NAT	D	FS	DE
7700450	7700000	EOR	2.94	2	2	AGG/NAT	D	FS	Drainage, agg 120 C/Y ¾" spot rock.
7700447	7700000	EOR	0.1	1	1	AGG	D	FS	Change MRS, show. ML2
7700444	7700440	EOR	0.19	1	1	NAT	D	FS	Berm after harvest
7700442	7700000	EOR	0.23	!	1	NAT	D	FS	Berm and Store
7700440	7700000	7700000	00.31	1	1	NAT	D	FS	Berm both sides after harvest
7755000	7700000	Main Eagle Trail Head	3.63	2	2	AGG	D	FS	Blade, Drainage, Clean Ditches, Clean Culverts Brush
7755050	7755000	EOR	0.52	1	1	NAT	D	FS	Clear, Blade, Harvest and Berm after sale. DE upper 0.17.
7755065	7755000	EOR	0.18	DE	DE	NAT	D	FS	DE and Obliterate after use as a temp road
7755075	7755000	7755000	0.38	2	2	NAT	D	FS	Meadow, Wet area, Leave road to Campsite, DE rest
7755090	7755000	EOR	0.62	2	2	NAT	D	FS	Change in MRS to ML2. Cabin Access
7755094	7755000	EOR	0.58	2	2	NAT	D	FS	Change in MRS to ML2. Cabin Access
7755150	7755000	EOR	0.09	2	2	NAT	D	FS	Overflow Trailer Parking dispersed Camping
6700000	7700000	Cty Rd 71	14.075	3	2	AGG	D	FS	Main Haul Route, Blade, Clean Ditches, Drainage
6700020	6700000	Bridge	0.53	2	2	NAT	D	FS	Closed to Public use at the Bridge. Pvt. Land access beyond bridge 0.2 miles
6700050	670000	EOR	0.87	1	1	NAT	D	FS	Grown In, DE
6700064	6700000	EOR	0.63	2	2	NAT	D	FS	Access to Ditch, Plan for Gate, DE last 0.28
6700065	6700064	6700000	1.01	1	1	NAT	D	FS	Closed road but used for Ditch Access
6700068	6700000	6700000	0.82	2	2	NAT	D	FS	Access to Private Property. FS section Change to MRS ML-1.
6700120	6700000	EOR	1.22	2	2	NAT	D	FS	Gated, Pvt. Access to cabin. Access to unit 8
6700122	6700000	EOR	0.59	1	1	NAT	D	FS	Clear, Blade, Access to

Route Number	Begin Termini	End Termini	Segment Miles	OB ML	OP ML	Surface Type	TSL	Juris-diction	Remarks
									units 5 and 74. Berm after harvest.
6700125	6700000	EOR	0.31	2	2	NAT	D	FS	Keep access open to 6700126. DE for 0.13 due to extreme wet area. DE at jct. 6700126.
6700126	6700125	EOR	0.08	1	1	NAT	D	FS	Clear and use for unit 7. Berm after harvest leave room for turnaround
6700127	6700000	EOR	0.23	2	2	NAT	D	FS	Clear, blade and use for units 2, Berm when done
6700130	6700125	Pvt. Land	0.31	2	2	NAT	D	FS	Change MRS ML-2 for Pvt. Access road. Move Chain and leave better turnaround at the 6700131 Jct.
6700131	6700125	EOR	0.21	1	1	NAT	D	FS	Access for PCT unit 150 Berm when harvest complete
6700132	6700000	EOR	0.24	2	2	NAT	D	FS	Clean and use for access to units 9, 80 and 2. DE TR-1 when harvest complete
6700133	6700130	EOR	0.08	1	1	NAT	D	FS	DE with berm and rip
6700140	6700000	Rock Pit	0.04	2	2	NAT	D	FS	DE after Rock Pit 0.30
6700141	6700140	Rock Pit	0.16	1	1	NAT	D	FS	DE after Rock Pit.
6700340	6700000	EOR	0.27	2	2	NAT	D	FS	Access to Ditch and unit 13 and TR-5. DE TR-5 when complete
6700342	6700340	EOR	0.14	1	1	NAT	D	FS	Clean, Blade for unit 13 and Berm after harvest
6700350	6700000	700000	0.11	2	2	NAT	D	FS	Using only 0.20 of this road of the total distance of 4.81.
6700351	6700350	EOR	0.13	1	1	NAT	D	FS	Using for Unit 1. Berm after harvest
6700800	6700000	6700150	0.80	2	2	NAT	D	FS	Needs brushing, drainage, for access to units 22, 97, 98, 15, 16. Leave open after sale
6700830	6700800	6700839	4.88	2	2	NAT	D	FS	Brush, grade, drainage, to 6700839 for unit 22. Leave open after sale
6700831	6700830	6700850	0.17	1	1	NAT	D	FS	Clear, open for unit 117. DE after harvest
6700839	6700830	6700830	2.96	1	1	NAT	D	FS	Open, clean, drainage and DE after harvest of unit 22,148 and 18
6700850	6700800	TR-8 and 15.	1.13	1	1	NAT	D	FS	Open, Clean and blade, use for units 97, 98 and 22 Berm after harvest.

Attachment #2 – Transportation System: Road Closure and Decommissioning Definitions and Strategies

Closed Road

A closed road is a maintenance level 1 road that is retained as a Forest Service system road, but closed to full-sized vehicle access by a variety of methods.

These roads may be officially open to off highway vehicles (OHVs), or receive OHV use associated with cross-country travel. Closed roads receive periodic basic custodial maintenance primarily to maintain road drainage.

Watershed protection strategies

To prevent surface erosion, closed roads will be closed with a barrier suitable to prevent access by all motorized vehicles. If OHV use is approved, barriers will allow for OHV access. Roads that are closed to all motorized vehicles will usually have adequate barriers installed, and should be patrolled to prevent OHV use. During periodic maintenance, road drainage will be maintained by clearing stream and ditch-relief culverts of debris. Before closure, a hydrologist working with a road manager may recommend additional hydrologic stabilization measures such as waterbars, subsoiling, pulling culverts and re-shaping stream channels, or other treatments based on land type, terrain, and road characteristics.

Decommissioned Road

A decommissioned road is not needed for future management and is permanently removed from the Forest Service transportation system.

Decommissioning treatments may vary from abandonment, to basic hydrologic stabilization, to total recontouring to match existing topography. In all cases, the route markers are removed and decommissioned roads are deleted from Forest Service Transportation Atlas.

Watershed protection strategies

The following watershed protection strategies define the level of treatment necessary to hydrologically stabilize a decommissioned road. The table at the end of this section displays road segments proposed for decommissioning as part of the Sparta project along with the treatment strategy (i.e. Types A through E, described below) that would likely be applied based upon site specific conditions.

Type A decommissioning

Some roads, such as ridge-top roads or roads in relatively flat areas are decommissioned administratively through sign removal, removal of the road from the map, and physical barriers to prevent access. This is referred to as abandonment. A road to be abandoned is already stable and is re-vegetating naturally. Roads to be abandoned are without stream crossings, are well vegetated and thus resistant to surface erosion, and are not prone to mass failure. Estimated costs for administrative decommissioning road treatments range from $50 to $500 per road.

Type B decommissioning

These roads have shallow culverts with up to five feet of average fill depth, with few road fills deeper than five feet, located in gentle terrain with relatively few stream crossings. Practices used to decommission these roads include:

1. decompacting road surface by subsoiling or scarification
2. removing stream crossing and ditch relief culverts and re-shaping banks
3. minor outsloping or cross draining with waterbars

4. full recontouring or barrier at road approach to prevent motorized access
5. Revegetating of disturbed soils using native seed and planting, and mulching.

Estimated costs for such road treatments range from $3,000 to $10,000 per mile.

Type C decommissioning

Roads have a mix of shallow and deeper culverts and larger fills (>5 ft avg. depth) on moderate terrain (0 to 30 percent slopes) with some stream crossings. They may occur within degraded riparian habitats within 300 feet of fish bearing streams. These roads may also have small bogs or seeps that may threaten fill-slope stability that would require special mitigations to provide drainage. Practices to decommission these roads typically include all practices described for type B decommissioning plus:

1. removing fills at risk of failure by end-hauling or re-contouring
2. obvious or frequent out-sloping and cross draining

Estimated costs for such road treatments range from $8000 to $15,000 per mile.

Type D decommissioning

Roads have numerous deep culverts and larger fills on steep terrain (30 to 40 percent slopes) with many stream crossings. They may occur within degraded riparian habitats within 300 feet of fish bearing streams. These roads often have small bogs or seeps that may threaten fill-slope stability. Practices to decommission these roads typically include all practices described for type B and C Decommissioning plus:

1. removing of all deep culverts and associated fills
2. removing fill and restoring slopes to as near original contours as possible on slopes at risk

Estimated costs for such road treatments range from $10,000 to $20,000 per mile.

Type E decommissioning

Full recontouring: Conditions along these roads vary widely. They may occur on extremely steep terrain (>45 percent slopes) with numerous, deep culverts. They may also occur within degraded riparian habitats within 300 feet of fish bearing streams. These roads represent direct and often chronic risk of degrading fish habitat and water quality. These roads are obliterated by completely removing the fill and restoring slopes to as near natural contours as feasible. Estimated costs for type E treatment range from $13,000 to $25,000 per mile.

Decommissioning roads to type B-E includes several standard approaches to treatment. Treatments along the road prism range from decompaction in areas with stable fill but reduced infiltration and productivity, to strong outslopes or complete recontouring in areas requiring fill stabilization. For every road, when stream crossing culverts and ditch relief culverts are pulled, the streambanks are re-shaped to match the adjacent slopes. Revegetation of treated areas combines seeding with a non-persistent grass mix, scattering duff excavated from natural ground above road cut-slope, and transplanting native forbs and shrubs which are growing on-site either adjacent to or on the road surface. Natural mulch consisting of onsite woody debris, logs, and stumps as well as imported weed-free straw mulch (used in areas where natural mulch is scarce) should be used to cover most disturbed ground. Treatments along stream crossings require a complete recontour of all fill material with stream channels restored to natural grade and dimensions. Each stream crossing receives the same revegetation prescription as the roadbed with a special emphasis on transplants of riparian vegetation. At completion, the area will no longer convey vehicle traffic, and requires no maintenance.